

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 137581	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (PCT/IPEA/416)	
International application No. PCT/GB98/00360	International filing date (day/month/year) 05/02/1998	Priority date (day/month/year) 19/02/1997
International Patent Classification (IPC) or national classification and IPC H04N7/30		
Applicant BRITISH TECHNOLOGY GROUP LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 5 sheets, including this cover sheet.

- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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**I. Basis of the report**

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

**Description, pages:**

1-13 as originally filed

**Claims, No.:**

1-21 as originally filed

**Drawings, sheets:**

1/1 as originally filed

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

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**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes:	Claims	1-21
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-21
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-21
	No:	Claims	

**2. Citations and explanations**

**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:

**see separate sheet**

Ad section V:

I. Independent claim 1:

- a. Independent claim 1 defines a method of compressing an image which is based on the traditional and well-known technique of subdivision of an image into blocks. The blocks are processed by a two dimensional transform (e.g. DCT) in order to obtain coefficients which range from most important (DC coefficient) to least important and which are quantized to generate corresponding digital values expressed as a plurality of bit planes for each block (e.g. MSB to LSB). The principle underlying the claimed method is the transmission of coded data on a bit plane basis starting from the most significant bit plane (the bit plane containing the MSBs). For this purpose, significant coefficients are selected, on the basis of their bit value for each plane, on each considered bit plane so that for each selected coefficient all the remaining bit planes are marked for transmission. The process is carried out iteratively so that whenever a new plane is considered any newly become significant coefficient on the basis of its bit value for said plane is marked and transmitted. Eventually, all planes will be transmitted. This method is embedded so that the bit stream can be stopped at almost any point and still allow a partial reconstitution of the picture. The principle of coefficient switching allows for compression efficiency as a given coefficient will only be transmitted whenever it becomes "significant".

The closest prior art is considered to be D1 = WALLACE G K: "THE JPEG STILL PICTURE COMPRESSION STANDARD" COMMUNICATIONS OF THE ASSOCIATION FOR COMPUTING MACHINERY, vol. 34, no. 4, 1 April 1991, pages 30-44, XP000228786 which gives an overview of the JPEG compression principle. In the JPEG coding method, the DCT progressive mode might be considered to be the closest to the claimed method. This DCT progressive mode calls for an encoding in which each image component is encoded in multiple scans rather than in a single scan in the sequential JPEG encoding. This encoding is hierarchical in that a first scan encodes a rough version of the image which thereafter is refined by succeeding scans. The partial encoding is carried out by either "spectral selection", i.e. most significant coefficients are transmitted first or by the partial transmission of the coefficient values (e.g. only the MSBs are transmitted).

However, the difference between the application and D1 is that, in the application,

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coefficients are transmitted only when they become significant (i.e some coefficients might not be transmitted at all) whereas in D1 all coefficient are eventually transmitted.

The claimed features are neither rendered obvious by nor disclosed in cited documents.

2. Independent claim 17:

- a. Claim 17 is the independent claim defining the apparatus adapted to carry out the method disclosed in claim 1. Therefore, the same conclusions apply to claim 17.

3. Dependent claims:

- a. The dependent claims define preferred embodiments of the method and apparatus respectively defined at claims 1 and 17.

Ad section VII:

In a further procedure, document D1 (see under section V) might be acknowledged (Rule 5.1 (a)ii PCT) and the independent claims might be accordingly worded in the two-part form (Rule 6.3(b) PCT).